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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,682	03/16/2004	Shinya Kimoto	P25054	1644

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EXAMINER

FANTU, YALKEW

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/800,682

Applicant(s)

KIMOTO, SHINYA

Examiner

Yalkew Fantu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>07-11-05, 09-13-04, p6/p6/p4</u> | 6) <input type="checkbox"/> Other: _____ |

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Prior Art

Since figures 6A, 6B and 7 are prior art; applicant should disclose the document pertaining to same if known, with relevant points as to the ratio and other limitations pertaining to the eccentric location, if known, it is material to this prosecution.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. On lines 10-12 of claim 1; lines 8-9 of claim 2, and on lines 10-13 of claim 3, the phrase "the fan is eccentric with respect to a center line of the distribution space perpendicular to the aligning direction of the rechargeable batteries in a direction of movement of the impeller" is indefinite. It is unclear how the horizontal perpendicular line of direction is in the direction of the rotating impeller where the direction of the impeller follows a circular path as indicated in the drawing. Since claims 4-19 depend directly or indirectly on claims 1, 2 and 3, they also contain this indefinite limitation and are also indefinite. Since claims 4-19 depend directly or indirectly on claims 1, 2 and 3, they also contain this indefinite limitation and are also indefinite.

Claim 6 line 3, the inequality expression expresses that the length "F" in the axial direction of the impeller is equal to half of the length of the battery pack "L". This

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relationship disagrees with the axial position of the fan claimed to be eccentric with respect to a centerline.

Claim Rejections - 35 USC § 102 / 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over the prior art applicant described in the spec and in the drawings. (See admitted prior art Figs. 6A, 6B and 7), (hereinafter APA Figs.6A, 6B, and 7).

2. With respect to claim 1, applicant's prior art discloses a battery pack apparatus comprising (Fig. 7): a battery pack (Fig. 7, 31) including a plurality of rechargeable batteries (Fig. 7, 32) arranged in parallel, the rechargeable batteries having cooling medium passages (Fig. 7, 33) formed there between; and a cross flow fan (Fig. 7, 35) disposed with an intake chamber facing a distribution space formed adjacent to one side face of the battery pack (Fig. 7, 31) to supply or discharge a cooling medium to each of the cooling medium passages (Fig. 7, 33), the fan having an impeller (Fig. 7,

36) disposed such that a rotational axis (Fig. 7, axis passing through the center of the impeller) thereof follows an aligning direction of the rechargeable batteries (Fig. 7, 32), wherein an axial position of the fan is eccentric with respect to a center line of the distribution space perpendicular to the aligning direction of the rechargeable batteries in a direction of movement of the impeller at the distribution space side (Fig. 7, 6A and 6B). The prior art described in Fig. 7 appears to be off of the centerline of the battery pack and thus appears eccentric.

3. As to the 103 alternative, where it is not eccentric, it would have been obvious to make it eccentric since the clip holding the fan to the pack 31 would have to be exactly dimensional to hold the fan to the pack so as to be centered. Thus, it would save time and engineering cost to allow some shifting of the centerlines. There would be some tolerance involved in any manufacturing process (note-this statement applies to the 102 reasoning above), or it would have been obvious to allow for such a tolerance, to allow for mounting to different sized packs. The clip itself is depicted as a little larger than the pack suggesting shifting of the two centerlines.

4. Regarding claim 2, applicant's prior art discloses a battery pack apparatus (Fig. 7) comprising: a battery pack (Fig. 7, 31) including a plurality of rechargeable batteries (Fig. 7, 32) arranged in parallel, the rechargeable batteries having cooling medium passages (Fig. 7, 33) formed there between; and a cross flow fan (Fig. 7, 35) disposed with an intake chamber facing a distribution space (Fig. 7, 34) formed adjacent to one side face of the battery pack (Fig. 7, 31) to supply or discharge a cooling medium to each of the cooling medium passages (Fig. 7, 33), the fan having an impeller (Fig. 7,

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36) disposed such that a rotational axis(Fig. 7, axis passing through the center of the impeller) thereof follows an aligning direction of the rechargeable batteries (Fig. 7, 31), wherein a length of a stabilizer (Fig. 7, 37).

5. As to the ratio, applicant appears to admit at page 8, lines 18-20, that Fig. 7, admitted prior art, discloses his invention as prior art, "at a stage previous". This indicates the fan portion 35 is old, since there is no disclosure for modifying the prior art in terms of the claimed stabilizing gap ratio. (It appears applicant's "invention" is to adjust the axial position of the fan to be eccentric as this is the only "stage" at later development that appears to be obtained).

6. As to the 103 alternative, where the ratio of the stabilizer to the diameter is not between 1.5 to 5, it would have been obvious to make it with in certain ranges in order for the stabilizer of the cross flow fan to regulate the air flow so that the battery pack would have to get an even air flow keeping the temperature variation between the cells to the minimum. Thus, widening the gap between the stabilizer and the impeller more than the ranges would incur more cost and complication over the integrated structure of the cooling system. In addition to that " the law is replete with cases in which the difference between the claimed invention and the prior art is some or other variable with in the claims... In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02- § 716.02(g).

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7. With respect to claim 3, all limitation has been met by the above-mentioned claims 1 and 2.

8. With respect to claims 4, 5, 10, and 11 applicant's prior art discloses an eccentricity amount x of the axis of the fan (Fig. 7, 35) with respect to a diameter D of the impeller (Fig. 7, 36), but, as to satisfying a relationship between " x " and " D " of a length of an eccentricity " x " of the axis and the diameter ' D ', See the remarks above for claim, 2.

9. Regarding claims 6, 8, 12, 13, 16 and 17; see the remarks above. Also the admitted prior art discloses the battery pack apparatus (Fig. 6A, 6B and 7) where " L " length of the battery pack (Fig. 7, 31) in the aligning direction of the rechargeable batteries (Fig. 7, 32) and " F " is a length in the axial direction of the impeller (Fig. 7, 36), and the fan (Fig. 7, 35) " y " is a displacement amount of the center of the impeller (Fig. 7) in the axial direction with respect to the center of the battery pack (See Fig. 7) in the aligning direction of the rechargeable batteries (Fig. 6A, 22), " L " is a length of the battery pack in the aligning direction of the rechargeable batteries, and n is the number of the rechargeable batteries (Fig. 7, 32) of the battery pack (Fig. 7, 31). But it is obvious, as described in the above claims of Prima Facie Case of Obviousness that the precise length of the battery pack " L ", the number of rechargeable batteries " n ", the length of the impeller " F ", and their relationship as compared to the prior art, applicant must show that the particular range is critical. " the law is replete with cases in which the difference between the claimed invention and the prior art is some or other variable with in the claims... In such a situation, the applicant must show that the particular range is

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critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.” In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02- § 716.02(g).

10. With respect to claims 7, 14 and 15, the prior art discloses the axis of the fan (Fig. 7, 35) is disposed to be perpendicular with respect to the cooling medium passages (Fig. 33).

11. Regarding claims 9, 18 and 19, the prior art discloses a battery pack apparatus (Fig. 7) wherein the fan (Fig. 7, 35) is disposed such that positions of junctures of vanes of the impeller in the axial direction are offset from positions opposite to the cooling medium passages (Fig. 4A, 23).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Hamada et al. (US 2004/0004461) reference teaches a battery pack and a rechargeable battery, which allow the battery pack to be efficiently and uniformly cooled, enabling the accurate control of a battery temperature (page 1, ¶ 0013).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yalkew Fantu whose telephone number is 571-272-8928. The examiner can normally be reached on (M-F);(8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KARL EASTHOM
SUPERVISORY PATENT EXAMINER